

15

tion of a first part, wherein the first part is the difference in peak-systolic velocity and end-diastolic velocity and a second part, wherein the second part is the difference in systolic pressure and diastolic pressure, and

- (b) a second area index of the artery, wherein the second area of the artery represents the area of the artery that is generating an arterial elastic recoil pressure for continuous flow during the systolic and diastolic phases.

**27.** The method of claim **22**, wherein the central processing unit is configured to calculate the arterial compliance index as a function of:

- (a) a first area index of the artery, wherein the first area index of the artery is a quotient determined by a proportion of a first part, wherein the first part is the difference in peak-systolic velocity and end-diastolic velocity and a second part, wherein the second part is the difference in systolic pressure and diastolic pressure, and
- (b) the stiffness limit of the artery, wherein the stiffness limit of the artery is defined to be at a point where the first area index of the artery is substantially equal to a second area index of the artery, wherein the second area of the artery represents the area of the artery that is generating

16

an arterial elastic recoil pressure for continuous flow during the systolic and diastolic phases.

**28.** The method of claim **22**, wherein the central processing unit is further configured to calculate the arterial compliance index by selectably employing at least one of the following:

- (a) pulse pressure;  
 (b) systolic vascular resistance pressure;  
 (c) diastolic vascular resistance pressure;  
 (d) systolic resistive index;  
 (e) diastolic resistive index;  
 (f) vascular resistance index; or  
 (g) cardiac output index.

**29.** The method of claim **22**, further comprising comparing the arterial compliance index of the artery of the subject with a second arterial compliance index derived from a mean reading of a segment of a population.

**30.** The method of claim **22**, further comprising comparing the arterial compliance index of the artery of the subject with a second arterial compliance index derived from one or more segments of the artery.

\* \* \* \* \*